

PRELIMINARY AMENDMENT  
U.S. Appln. No. 09/894,008

a cleaning liquid ejection port formed inside said gas ejection port;

whereby a gas is ejected from said gas ejection port at a speed higher than that of a cleaning liquid from said cleaning liquid ejection port to transform the cleaning liquid into droplets and to accelerate them.

2. (Original) A cleaning nozzle according to claim 1, wherein a gas jet flow passing through a central part of said gas ejection port converges at a point upstream of said minimum diameter portion.

3. (Original) A cleaning nozzle according to claim 1, wherein a cross-sectional area of said gas ejection port perpendicular to a direction of its axis is progressively reduced toward its downstream open end to accelerate the gas.

4. (Original) A cleaning nozzle according to claim 1, wherein a cross-sectional area of said gas ejection port at its downstream open end is set almost equal to or slightly smaller than that of said minimum diameter portion.

5. (Original) A cleaning nozzle according to claim 1, wherein a ratio between a cross-sectional area of said gas ejection port at its downstream open end and a cross-sectional area of the minimum diameter portion is set to 1:1 to 1:1.3.

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6. (Original) A cleaning nozzle according to claim 1, wherein a distance from said cleaning liquid ejection port to a downstream end of said ejection nozzle portion is 10-50 times a diameter of said minimum diameter portion.

7. (Original) A cleaning nozzle according to claim 1, wherein a powder material can be supplied to an upstream side of said gas ejection port.

8. (Original) A cleaning nozzle comprising: an ejection nozzle portion having a minimum diameter portion and a trumpet-shaped portion formed by a curved surface located upstream of said minimum diameter portion, an inclination angle of a tangent to the curved surface progressively decreasing toward said minimum diameter portion; a gas ejection port formed along the curved surface and opened to an intermediate part of said trumpet-shaped portion; and a cleaning liquid ejection port formed inside said gas ejection port; whereby a gas is ejected from said gas ejection port at a speed higher than that of a cleaning liquid from said cleaning liquid ejection port to transform the cleaning liquid into droplets and to accelerate them.

9. (Original) A cleaning nozzle according to claim 8, wherein a gas jet flow passing through a central part of said gas ejection port converges at a point upstream of said minimum diameter portion.

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10. (Original) A cleaning nozzle according to claim 8, wherein a cross-sectional area of said gas ejection port perpendicular to a direction of its axis is progressively reduced toward its downstream open end to accelerate the gas.

11. (Original) A cleaning nozzle according to claim 8, wherein a cross-sectional area of said gas ejection port at its downstream open end is set almost equal to or slightly smaller than that of said minimum diameter portion.

12. (Original) A cleaning nozzle according to claim 8, wherein a ratio between a cross-sectional area of said gas ejection port at its downstream open end and a cross-sectional area of the minimum diameter portion is set to 1:1 to 1:1.3.

13. (Original) A cleaning nozzle according to claim 8, wherein a distance from said cleaning liquid ejection port to a downstream end of said ejection nozzle portion is 10-50 times a diameter of said minimum diameter portion.

14. (Original) A cleaning nozzle according to claim 8, wherein a powder material can be supplied to an upstream side of said gas ejection port.

15. (Original) A cleaning nozzle comprising:

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a converging-diverging nozzle portion having a minimum diameter portion and a trumpet-shaped portion formed upstream of said minimum diameter portion;

a gas ejection port formed along said trumpet-shaped portion and opened into an intermediate part of said trumpet-shaped portion; and

a cleaning liquid ejection port formed inside said gas ejection port;

whereby a gas is ejected at a higher speed than that of a cleaning liquid to transform the cleaning liquid into droplets and the droplets are further accelerated downstream of these ejection ports before being ejected out from the cleaning nozzle.

16. (Original) A cleaning nozzle according to claim 15, wherein a gas jet flow passing through a central part of said gas ejection port converges at a point upstream of said minimum diameter portion.

17. (Original) A cleaning nozzle according to claim 15, wherein a cross-sectional area of said gas ejection port perpendicular to a direction of its axis is progressively reduced toward its downstream open end to accelerate the gas.

18. (Original) A cleaning nozzle according to claim 15, wherein a cross-sectional area of said gas ejection port at its downstream open end is set almost equal to or slightly smaller than that of said minimum diameter portion.

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19. (Original) A cleaning nozzle according to claim 15, wherein a ratio between a cross-sectional area of said gas ejection port at its downstream open end and a cross-sectional area of the minimum diameter portion is set to 1:1 to 1:1.3.

20. (Original) A cleaning nozzle according to claim 15, wherein a distance from said cleaning liquid ejection port to a downstream end of said ejection nozzle portion is 10-50 times a diameter of said minimum diameter portion.

21. (Original) A cleaning nozzle according to claim 15, wherein a powder material can be supplied to an upstream side of said gas ejection port.

Claims 22-26 (Withdrawn).

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27. (New) A cleaning nozzle according to claim 1, wherein a pressurized gas flow passage feeds into the cleaning nozzle for allowing a small amount of clogging prevention liquid to be injected into an intermediate section of the pressurized gas flow passage between a powder injection portion and the cleaning nozzle.

28. (New) A cleaning nozzle according to claim 15, wherein a pressurized gas flow passage feeds into the cleaning nozzle for allowing a small amount of clogging prevention liquid

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to be injected into an intermediate section of the pressurized gas flow passage between a powder injection portion and the cleaning nozzle.

29. (New) A cleaning nozzle according to claim 1, wherein the amount of the clogging prevention liquid is smaller than that of liquid supplied to the cleaning nozzle.

30. (New) A cleaning nozzle according to claim 15, wherein the amount of the clogging prevention liquid is smaller than that of liquid supplied to the cleaning nozzle.

31. (New) A cleaning nozzle according to claim 1, wherein the amount of the clogging prevention liquid is smaller by weight than that of the powder injected.

32. (New) A cleaning nozzle according to claim 15, wherein the amount of the clogging prevention liquid is smaller by weight than that of the powder injected.

33. (New) A cleaning nozzle according to claim 1, wherein the amount of the cleaning prevention liquid is smaller by volume than 1/1000 that of the pressurized gas flow.

34. (New) A cleaning nozzle according to claim 15, wherein the amount of the cleaning prevention liquid is smaller by volume than 1/1000 that of the pressurized gas flow.

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35. (New) A cleaning nozzle according to claim 1, wherein the clogging prevention liquid is made to continue to be injected for a predetermined period after the injection of powder into the pressurized gas flow has stopped.

36. (New) A cleaning nozzle according to claim 15, wherein the clogging prevention liquid is made to continue to be injected for a predetermined period after the injection of powder into the pressurized gas flow has stopped.

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